

# **PREPRODUCTION INITIATIVE HELICOPTER TRANSMISSION FLUID PURIFICATION UNIT OPERATING PROCEDURE**

***NOTE: At no point will any oil from these tests be returned to any aircraft.***

## **PROCEDURE FOR PURIFYING, MEASURING AND SAMPLING DOD-L-85734, HELICOPTER LUBRICATING FLUID, DRAINED FROM SH-60 MAIN GEARBOXES**

1. Position the unit and the inlet and outlet cans in an open area. The cans should be next to each other in front of the unit. Ensure that spill cleanup materials are available in the event of spillage. Position the power cord near an electrical outlet or extension cord, but do not plug it in at this time. Handle the oil in accordance with any local procedures. Turn on the WS04 water sensor (WS04) to allow adequate warmup time.
2. Determine the lab sample ID number. The ID number consists of the calendar date, in MMDDYY format, followed by a code of U or xP. U stands for an unpurified sample, and P for a purified sample. The “x” preceding the P indicates the number of passes through the purifier—usually three, unless otherwise directed. For example, an unpurified lab sample run on **7 February 2001** has an ID of **020701-U**. A purified lab sample run through the purifier three times on **12 February 2001** has an ID of **021201-3P**.
3. Fill out the date, quantity, operator name and squadron number, ID number and Aircraft Bureau Number (A/C BUNO) on one of the datasheets in the operations binder located on the unit. Get out two sample bottles and labels for collecting lab samples.
4. Record the A/C BUNO and the other information requested by NAWC PAX on both labels. Record the ID for the unpurified sample on one label, but do not record the ID for the purified lab sample at this time. This will be recorded upon completion of the third pass. If, for example, mechanical problems or external priorities necessitate stopping the test before all three passes are completed, record the actual number of passes completed (e.g., 1 or 2 passes).
5. Agitate the oil container (if appropriately sealed) to mix the sample in preparation for taking a lab sample.
6. Collect lab samples in accordance with NAWC PAX instructions.
7. Using the WS04, dip the sensing wand into the lab sample bottle. Keep the sensor in the oil until a numerical reading is displayed on the WS04. Record this number on the lab sample bottle label and the datasheet. Record the time the WS04 was used. Following each water content analysis, clean the probe of the WS04 water sensor according to the manufacturer’s directions.
8. Transfer the remaining oil into the inlet can.

9. Uncoil the two hoses and put the inlet hose in one can and the outlet hose in the other. Ensure that the hoses are not kinked, frayed, or in any other disrepair. Position the ends of the suction and discharge tubes in the bottom corner of the can.
10. Open the ball valves on the inlet and outlet hoses. Do not open any other valves at this time.
11. Visually check that the configuration/setup is correct. If it is correct, plug in the unit and turn it on. Check the time started and record it on the datasheet. A five-gallon volume will be pumped through in approximately 12 minutes.
12. When all of the oil is pumped out of the first can, shut the unit off and close the valves on the inlet and outlet hoses. Using the WS04, check the water content of the oil by dipping the sensing wand into the oil in the second can. Keep the sensor in the oil until a numerical reading is displayed on the WS04. Record this value on the datasheet, as well as the time it took to collect the sample. Following each water content analysis, clean the probe of the WS04 water sensor according to the manufacturer's directions.
13. Switch the hoses from can to can. Be careful of drips and spills when switching the hoses. The oil is going to be pumped back into the first can.
14. Repeat steps 11, 12 and 13. This completes the second pass through the unit.
15. Repeat steps 11 and 12. This completes the third and final pass through the unit.
16. Determine the lab sample ID number based on the number of actual passes through the purifier and record it on the label. Collect a purified lab sample in accordance with NAWC PAX instructions.
17. Using the WS04, dip the sensing wand into the sample bottle. Keep the sensor in the oil until a numerical reading is displayed on the WS04. Record this number on the lab sample bottle label and the datasheet. Record the time the WS04 was used. Following each water content analysis, clean the probe of the WS04 water sensor according to the manufacturer's directions.
18. **At no point will any oil from these tests be returned to any aircraft. After purification, the oil is to be handled and disposed of in accordance with local procedures, unless the entire sample is requested by NAWC PAX.**
19. Remove hoses from cans and drain residual oil from the hoses. Be careful of drips and spills when removing and draining the hoses. Do not open any valves. Stow and secure the hoses and power cord. Turn off and store the WS04.

20. Record any observations, discrepancies, comments, and/or suggestions from this operation in the space provided on the datasheet. Your input will provide insight into the operational aspects of this unit. **Your assistance will help this evaluation provide the best possible equipment to the fleet.**